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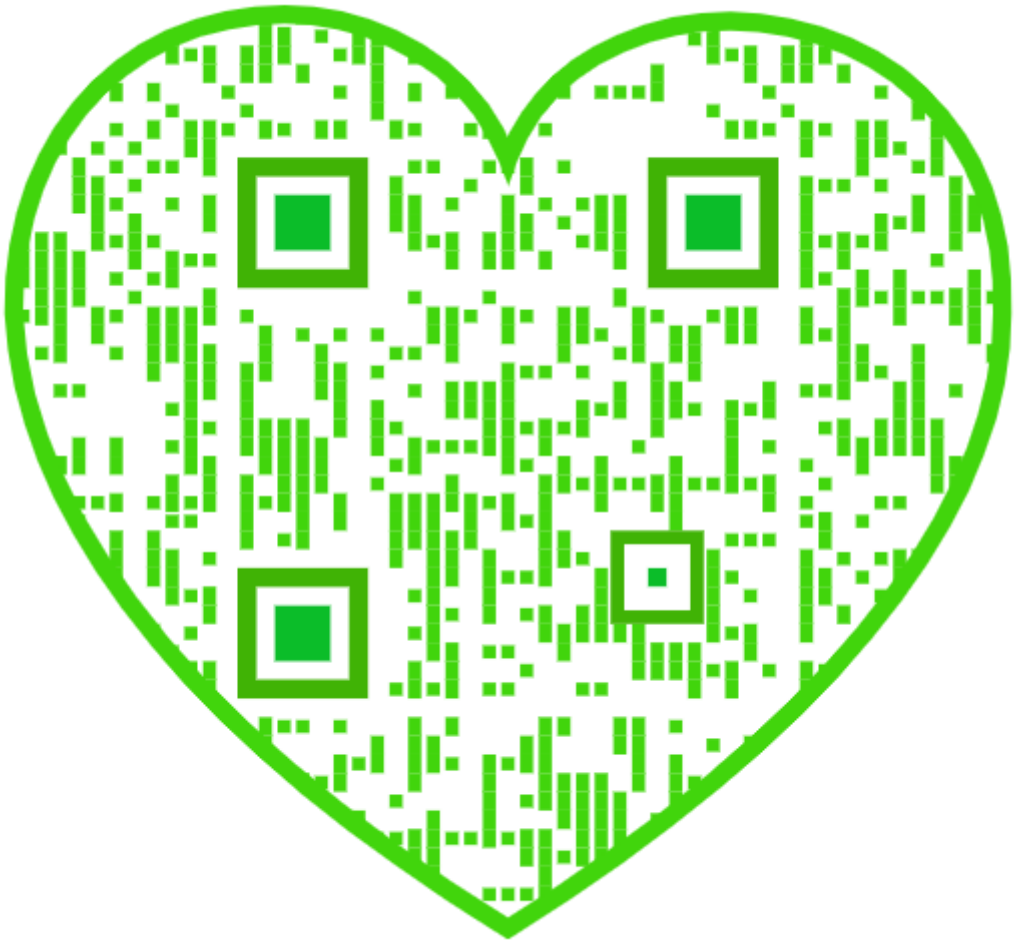

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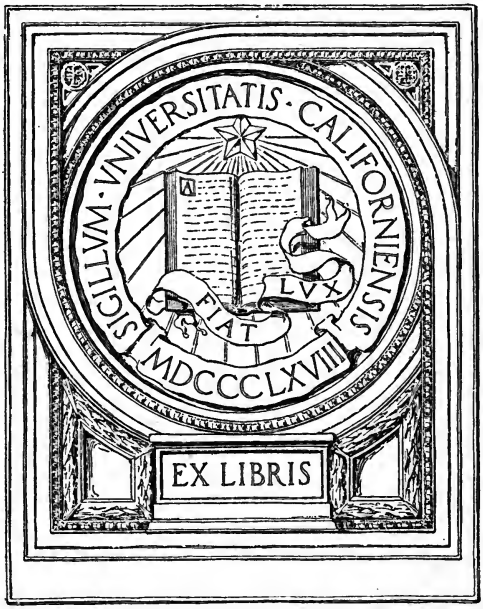

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FACTS CONCERNING CITRUS TREES AND THEIR DISEASES

BY

DR. H. L. MESSICK

Pomona, California

CITRUS TREE CULTURE

Facts on Citrus Trees

AND THEIR DISEASES

BY

DR. H. L. MESSICK

POMONA, CAL.

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BY
H. L. MESSICK
POMONA, CALIFORNIA

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Dr. H. L. Messick's Opening Prayer for this book

All powerful and all merciful Creator, it is my pleasure to call upon Thee before commencing to prepare such enlightenment to the people upon this earth as will serve to give them better understanding.

I ask of Thee that Thou will be willing to give me the exact words of truth upon the very important subject of which I expect to write.

I pray Thee that Thou will not allow a single word to appear upon this pamphlet which will not give great value to my readers.

I ask Thy blessing to rest upon the readers of this pamphlet and give to him or her the true understanding and meaning of every word written herein.

I thank Thee for all the past blessings and ask Thee that Thou will render to me such strength, wisdom and knowledge as will make this book the greatest power and benefactor to the industry for which it is especially prepared.

Thanking Thee for all the blessings that have been rendered to me during my past life, asking that Thou wilt continue to guard, guide and direct me through the coming journey of life and when Thy call shall come, I ask that Thou wilt fit a place in Thy kingdom.

These favors I ask in the name of our blessed Savior, who gave His life that we might be saved.

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PREFACE

Dear Reader, I am about to enter upon one of the most important subjects that has ever been dealt with in the State of California. My purpose is to give to the citrus grower a more perfect understanding of the nature of his tree. We all realize that life is practically the same to all things that have life. No, doubt, my readers will be somewhat surprised to read some things concerning the facts laid down by nature, as it has not, so far in the history of all times, been made as clear as it should have been. There is only one way in which we can obtain absolute facts concerning the life of a tree, as books, periodicals and science differ so greatly upon their construction of life and health concerning trees and plants. It has been my pleasure for the past sixty years to study the wonderful book called "NATURE" and to not copy from any writer.

We can only understand our soils, our plants, our trees and our shrubs by the careful study of our soil conditions and our distributions of the many elements connected therein. We all have a natural understanding and as quick as the facts are thrown in front of us with this natural understanding we can readily take the values therein.

The writer, when a little boy, had a grandfather who so loved the trees that he became a nurseryman and grew the first nursery stock grown in western Illinios. The writer at six years became very fond of this

old grandfather who served in the Revolutionary War, and who was beyond question a true Christian and who believed that his efforts and his results were wholly obtained from faithful prayer, together with the ambition and determination to conquer and produce the best results from all his undertakings. He became very fond of the writer and instilled into him at this early age the same kind of ambition and determination, and the writer becoming fascinated with the study of trees grew up with this good old man until, he at a young age, became so well acquainted with the methods of propagation and with the natural understanding of tree life, that it became impossible for him to even think of anything else other than a tree.

In the writer's home city a few years ago, while he was coming down one of the business streets, a party of men were standing on the corner. Among these men were two lawyers, one a money-lender and one a congressman. As the writer came nearer to them the congressman made a wager with the money-lender; he would bet a good cigar that he could not hold a conversation with the writer ten minutes without the writer making some remark referring to a tree. Some weeks after this it appeared in an evening Journal that the money-lender had attracted the attention of the writer on other subjects of conversation to the extent of six minutes, thereby losing his wager in the period of time set by the congressman.

This same ambition, determination and desire to acquire the best knowledge possible to be obtained concerning tree life and their requirements and de-

mands upon the soil has been fully kept up by the writer to this day, and he still goes on searching for more and better knowledge than he has already obtained. His experiments have been very numerous and his results most wonderful. In several instances the writer has taken diseased trees that were even condemned to death by the leading authorities and produced wonderful cures.

I desire my readers to understand that my Creator has been my advisor and I have only been his agent or executor. Every reader will recall some time in life when he has had some fine visions and has failed to put them into use and has later in life seen the results of his visions being carried out by some other person. We all have made mistakes in ignoring many sweet dreams that have come to us during life, when if they had been properly tested, no doubt, would have brought surprising results. It is when a man is most deeply interested in his industry, that he probably becomes more or less weary over his results and conditions that these blessed dreams appear, and oft-times these dreams will remain with us for days and weeks and keep refreshing our memory and we continue to ignore and harden ourselves against such dreams as being unworthy of even a thought. I would simply suggest to the reader, that when he has a dream that concerns his line of industry or line of thought, that in any manner appeals to him the least bit possible, that he at once act in accordance with this dream and test results. The writer at one time in his early life had a dream; this dream said to him that grandfather did not cut

his scions right; the dream suggested that the scions should be cut in diamond shape, as well as the incisions upon the seedling, thereby making a perfect fit of the scion to the incision; then by applying the pruner's wax and carefully inserting the scion a perfect union is met with between the scion and the stock or the seedling. Of course, this was in the days when we grafted entirely upon the collar or crown of the seedling and before the days of cellar grafting. This diamond cut graft and incision, when properly done, keeps any water from surrounding the scion, thereby producing an improper union, which followed down, produces a black streak through the heart of the tree and in later years produces a weak constitution or chronic diseases. Many of our diseased trees are not altogether produced in the orchard or grove; that is to say, the cause of the disease, but in many instances the imperfect union and unskilled methods of propagation in the first nursery row.

DISEASES OF TREES

Diseases of trees are similar to diseases of mankind. Many times a child while in infancy contracts an imperfection and the child lives and grows to manhood or womanhood with this imperfection, and later in life develops diseases; so it is with the tree. We all understand that the wild fruit, which nature created, is the true and only genuine method or system of production, but by education and enlightenment and experimenting the human mind has developed an improvement, or in other words a method in which we could improve upon the many varieties of wild fruit. By doing so we to some extent have to cross with nature to bring about the most desirable results, and the writer's experience has been that as little variation as possible from nature's own methods produces the best results. For illustration: I will carry some of you old readers back to your boyhood days when father's orchard perhaps reached the age of twenty or twenty-five years. Don't you remember it was more than a ten year old boy could do to make his fingers meet in reaching around the body of father's trees. Today there is scarcely a tree that stands in the orchard or the grove that has reached the age of twenty-five years but what a six year old boy can lay his fingers together around the body. Naturally the reader will ask the question: "Why should this be?" My answer is, that under our continued development of science we have beyond all question of contradiction decreased the vi-

tality and weakened the constitution by our present methods of propagation to the extent that the tree today requires much more nursing and much more care than in the day of our grandfathers. It is also true that we have many more enemies and much more disease of the tree than we had some sixty years ago. Now this cannot all be laid at the doorstep of climatic conditions for the simple reason this does not only apply to trees, plants, etc., but to agricultural products as well.

When a young man the writer conceived the thought that the man who wrote the first book, that has been handed down from generation to generation, which is no doubt a wonderful book, if it be written by man, he surely is entitled to great credit beyond mention, but if he was a man who wrote this first book, I want to ask the one question. If there were no books for him to copy from, how did he obtain his knowledge? I answer the only possible way in which I could see that he gained such knowledge was by the study of nature itself. Could it be possible that all men of today are subject to error? The writer is ready and stands open to contradiction, that this great writer did make one error at least and that error is the most important feature in the citrus industry. I don't think you can find where this great writer has ever spoken of that. In this creation, every single thing was created that was expected to live, exist and die, is created with a body. I firmly believe that the reader, when he stops to think for one moment, will agree with me on this point. Now, in the creation of this body,

it might be termed the house in which the life of every living thing is housed.

LIFE OF THE TREE

The writer only asks you to refer to himself for the explanation; my body represents my life, the body of my tree represents the life of that tree. You will also agree with me that the tree has two distinct agencies. The important agency I term as the receiving agency; where the main roots intersect the base of the tree. These base roots are scientifically termed the lateral roots, and support the hair-like feeders that search the soil for the different elements of goodness for the welfare of the tree.

These base roots, according to the book of nature. should grow in proportion to the spread of the branches; then they should dip downward and extend further into the center or midway of the rows. Now trees are like children; when in infancy the tree can be trained to please the grower, or in other words, the nurseryman can grow the tree during the life of the nursery row to please his ideas. When planted in the grove, then it becomes the pleasure of the grower to train that tree according to his ideas.

We can train the roots to follow along the surface if we so desire, or we can train them to dip deep into the earth if we so desire. This method of training will be explained further on in this book where the writer speaks of cultivation and proper root training.

We go back now to this receiving agency and we find that the nutritious matter gathered by the many feeders is being transported to the base of the tree through this base root and there comes in connection with the mechanical action of the tree, which forces its way through the many sap cells or channels of distribution, passing through the body up to where the branches branch out. There it comes in contact with the distribution agencies, which send it further on through the branches to the twigs, through the twigs to the stem of the foliage, distributing its proportion of nutritious matter from the many channels or cells to all parts of the top of the tree.

The writer, in his close study of the anatomy of the tree finds that each base limb and each branch leaving this base limb is spread through separate cells or channels of distribution of sap. Therefore one base limb may die from injury or some other cause and not affect the next limb or branch. The writer has gone into this particular study so carefully he has been able to know, or perhaps almost correctly if not quite, the number of sap cells passing through a three year old tree and through its distributing agencies, which took him months of careful study and with the strongest glass to be found, as these sap cells are very, very small channels. In some varieties of trees they are much larger than in other varieties where sap is heavier and trees grow larger.

With the citrus tree the writer finds the sap so much heavier than that of the apple. I desire the reader to understand right here that the writer has

only made his life study upon two varieties of trees, namely; the apple and the citrus, and as stated above the sap of the citrus tree, and especially the orange, is much heavier than that of the apple. To understand thoroughly the difference between the two varieties of trees, it is necessary to study the native home of both varieties.

DIFFERENCE IN THE VARIETIES OF TREES

In their wild nature I have found that the citrus tree originated in quite a different climate than that of the apple. Therefore, the citrus tree in its native climate does not become absolutely dormant at any period of the year, but continues to drop and take on new foliage at three different periods of the year, thus widely differing from the apple. The citrus tree has three ascensions and three descensions every twelve months, nature intended that at certain periods the citrus tree should rest to some extent while nature hardened its wood growth. This, the writer is satisfied, is not well understood by growers, and he is ready to assert that too much water and too many cultivations at this period does the tree an injustice, not allowing it to properly harden and mature its wood, therefore, forming an imperfect or a weak bud. This important subject will be dealt with in this book later.

BODY OF THE TREE

Getting back to the body of the tree.— Now the writer desires to impress upon the mind of every reader

that the body of his tree represents all, and the care and treatment given this body determines most emphatically your future success. The treatment of bodies in order to keep them in perfectly healthy condition will be discussed later in this book.

The one reason I speak so strongly concerning the body of the tree is for the fact that it represents the most vital points concerning tree life. To keep this body in good condition means that it is necessary to take a fine wire brush once during the season from March to June, and thoroughly brush from the tree every particle of rough scale or moss, cleansing the body thoroughly and apply some local application that would serve to keep the body from becoming sunburnt and keep the bark loose so that it might expand with the natural demands of growth. It is safe to say that the writer is the first man who found it absolutely necessary, in order to get the best results from his trees, to give the body the most attention.

And next following the body, in order to obtain the best results, is by carefully looking after your root system, keeping the soil under the tree moist and giving it sufficient cultivation, which is best done by using a potato hook or a tool made upon that line. If the earth has been thrown up to the tree and has covered up the body too much, it should be removed and a basin made around the base of the tree, where light and air might penetrate the intersections of the base roots to the body of the tree. This will aid wonderfully in the curing of diseases.

The soil should be cultivated at least once, and

twice would be better, during the summer period. Lack of moisture under the trees is one of the greatest drawbacks; this applies especially to trees which are from twenty to thirty years old. With old trees the spread is very great and the irrigation ditch being so far away from the body of the tree, it would be profitable to the grower if he would make a cross trench from his irrigation ditches to the trunk of the tree, and let the water run into the basin as described above. A small amount of water during June, July and August irrigations, as these months would consume moisture better than any other three months during the year.

One of the bad features that the citrus tree must contend with in Southern California is the temperature of the water used from wells and running through pipes without sufficient amount of sunlight and air. To remove the cold temperature and the shocking nature of the cold water on the trees, I foresee the time coming when the foothill water will be of great value.

When a foothill canal has been excavated, all the mountain water will be retained in this canal until it has abundance of air and sunlight before being used for irrigation purposes and by this means another great value will be added to the growers, retaining this surplus water and preventing it from overflowing, which has done so much damage by filling in new soil.

I have visited groves where there has been more than a foot of soil filled in after the planting of the tree. In all of these instances, in a very few years, you began to see your trees deteriorate and diseases develop,

unless a basin is dug around the base of this tree at least two feet from the body of the tree, and unless the elements desired by the tree are placed in this basin, your feeders will soon die and smother out, leaving your tree in a choked condition of which the receiving agency soon becomes closed and further expansion and growth is stopped.

You must understand that, whatsoever comes in contact with the body of the tree that would form a tightening or exclude the air, will in due time cause the action of the sap to relax. I do not mean to say that your tree will not live for some time and produce some fruit, yet, as year after year rolls around, the death rate will be greater.

It is so hard for the writer to impress upon the minds of the citrus growers some facts that are being practised year by year that do not bring noticeable results for so long a time. For illustration; a great many so-called tree doctors have made discoveries of different body treatments that have never been thoroughly tested out. It requires several years to test out any treatment upon a tree thoroughly—perhaps the Bordeaux mixture has been more thoroughly tested than any other mixture.

All of those who have tested the Bordeaux mixture for five years, I am satisfied, will not speak favorably of it, for the simple reason that anything that forms a paste would have a tendency, if completely covering the body, to exclude air and prevent proper expansion. It will take time to tell as to the injury done to trees by this mixture.

Others have applied coal tar, time will tell of the injury caused by this treatment; some have used oils, it only takes time to tell the injury caused by this treatment:—a little horse sense would come in very handy when applying oil to a tree. Any of the growers who have ever had any experience in allowing hogs to run in an orchard, just notice where a hog rubs against a tree a few times. In one year's time you can notice a dead spot on the body of that tree where the hogs have rubbed, as the greasy substance from the hog closes the pores of the bark and cuts off circulation at once.

To make a long story short, the writer wants to impress upon the reader this one indisputable fact—you cannot use anything, no matter what, successfully upon a tree that will not disolve in water. This point will save the grower, if he will only take heed, from injuring his trees. Take a sample of the general remedies and see if you can reduce them or if they will mix with water. If they will not mix with water, my advice to you is, keep any remedy off your tree that will not.

The writer has made a great many experiments upon the body of the tree with practically every chemical or drug that has been heard of, and, until he discovered the above fact he never was so successful with trees, and the only application of real value to your tree is one made from absolutely nutritious elements,—something that would be porous and at the same time a non-conductor of heat, something of a penetrating nature that will keep the bark in a nice

velvety condition so it may expand with the natural demand of growth.

The writer will describe later in this book about his own discoveries and is thinking very seriously of enclosing inside of this book his wonderful formulas, on account of his age and afflictions which will soon render him unfit for active service. His remedies are well known from the Atlantic to the Pacific.

TREATMENT OF THE TREE

To treat trees properly and to the best of their interests, the writer will have to have the co-operation of the readers and determine all the surrounding conditions of his orchard or groves, and at the same time give the soil in this grove your particular attention. The most correct analysis can be taken by the owner himself, really better than any expert can do, as science has taught the reader to understand that certain elements are necessary in the soil for the development of certain productions.

It is the writer's opinion that nature has given us the best lesson possible to be obtained upon this important subject of determining the elements in your soil. For illustration: if I wanted to determine how much nitrogen I had in my soil, I would certainly plant a few rows of potatoes; if I grew rank vines, black and strong, this would indicate I had plenty of nitrogen available. If I wanted to test for potash, I would plant a few rows of navy beans; if they grew strong and vigorous, this would indicate that I had plenty of pot-

ash. This same rule will apply to all elements as well as minerals. In order to determine the mineral elements, plant a few rows of strawberries, and if you can produce sweet berries without acid being strong enough to take the skin off of your mouth, this would determine the question of minerals available.

I desire to make plain right here that fruit, which has been commonly understood as being composed of nitrogen, phosphate and humus, is absolutely a mistake; as the flavor, texture and development of all characteristics of fruit depends largely upon the mineral substances in the soil. Without these mineral substances you cannot produce the fine flavor, the fine texture, and the high polish rind.

This requires no argument other than a little bit of good horse sense and observation, as every reader will agree with me that the mountains that contain the numerous beds of minerals are ideal spots. If the conditions would permit to produce a high flavor, a fine texture and a high polished rind, these substances can be easily explained and administered by applications to the body of the tree and the results are surprising.

The writer thinks at this point it would be well to quote some of our great writers as to their conceptions of nature.

"We would be happier if we studied nature more in natural things; and acted according to nature, whose rules are few, plain, and reasonable. Let us begin where she begins, go her pace, and close always where she ends, and we cannot miss of being good naturalists." —William Penn.

"Nature does not capriciously scatter her secrets as golden gifts to lazy pets and luxurious darlings, but imposes tasks when she presents opportunities, and uplifts him whom she would inform. The apple that she drops at the feet of Newton is but a coy invitation to follow her to the stars."—Whipple.

I desire to also have my readers understand that this book will not be indexed or chaptered; on the other hand, it will read straight from beginning to end, as it is a fact the readers can only get the value that the writer is to hand out by absolutely reading every word in this book.

DISEASES OF THE TREE

The writer realizes the most important factor in this book will be the subject of tree diseases, their causes and cures. In the first place trees are like individuals, are just as sensitive and just as much subject to diseases. There is always a cause for the starting of a disease, this cause may be laid to many conditions, especially with a tree.

Did you ever stop to think that a dozen men may contract the same identical disease, with the same conditions producing the disease. You will note that a number of these men will improve rapidly, while all being administered the same treatment, some are slow to recover and others perhaps may die from the effects.

Now trees are the same, as I have said before. You may take a grove, perhaps a dozen or two trees are diseased. You apply certain applications or reme-

dies and a certain percentage of these trees show recovery, while others show no sign of recovery by the same treatment. Therefore, it is an indisputable fact that some trees can stand and throw off disease better than some others, some trees like men being more strongly constituted than others, and the weaker require more careful nourishing and perhaps longer treatment.

I desire to instill into the readers the one prominent fact that all men are not constituted alike, neither are all trees constituted alike of the same varieties, neither are all animals constituted alike of the same family; therefore, it is necessary that we have patience to care for, nourish and treat the weaker ones of these families more carefully than we would have to do with the more rugged, even though they suffer from the same cause and the same disease. For illustration; the writer has taken trees that have been pronounced incurable, yet, at the same time they have responded to treatment and have quickly recovered, while others which were only considered in a bad condition have taken very much more time, pains and care to produce the same results as mentioned in the former.

There can be many causes for citrus tree diseases; the writer will not attempt to mention all causes and conditions, but a few of the most important. In the first place, as stated in this book, it has often been the case that the infant tree has contracted its disease in the nursery row and not even recognized by the nurseryman or the planter, but as the years roll around the effects become more noticeable.

One of the greatest causes for tree diseases is perhaps overlooked by more growers than any one thing, and that is soil conditions under the spread of the tree. For illustration; you certainly have common sense enough to know that where soil lies dormant under any covering whatsoever, it becomes puttyfied, and I presume you will know that the soil contains fine rootlets close to the surface running pro and con in every direction, which keep the pores of the soil open. You take and put a covering over this condition and these rootlets that keep the soil open soon become dormant and lifeless.

When your soil reaches this stage the vegetable matter in the soil becomes crystalized; this takes away the life action of the soil. When this point is reached, then your soil becomes infected with impurities, sour, moldy and greasy-like, without life. This condition existing around the tree is more serious, perhaps, than under some other conditions, as the tree itself, or rather the body of the tree, is like your own body; it perspires, throws out a secretion. With soil in this condition this secretion acts in the manner as the secretion from a man's body thrown into his underwear, which would in due time produce a horrible odor; or if continued for a period of years will absolutely, and I defy contradiction, produce a disease such as would be fitting to the individual, animal or tree.

Trees have their peculiar diseases, as well as men and all other families, and I am going to say right here something that I am satisfied many of my readers will disagree with me about, but at the same time I have

absolutely demonstrated facts, and that is this: every living family, no matter what family it is, or in other words, every living subject, was created with certain germs imbedded in the house of life and upon certain conditions, produce either insect enemies or disease. Filth, impurities, poisons, together with climatic conditions favorable, will develop this germ or insect and deterioration is well on its way.

I wish to impress upon the mind of the reader one more thing, "An ounce of preventive is worth a pound of cure," which has proven a fact in every instance from the planting of the tree down through its living history. The body of that tree should be, and must be in order to preserve health and strength, kept clean, and the soil must be kept moist where this tree expects to gather its nutritious matter. If this method had been carried out from the infancy of trees, I would have to close the manufacturing of tree medicines upon short notice, as there would be no demand. On the other hand, we have neglected, and we are paying the penalty that nature has laid down, by not having the real true understanding of nature in regard to our trees.

Practically all diseases of the tree are due to the conditions herein mentioned. While one may show in different form to the other, yet the same conditions, I wish you to understand practically cause all of it. For illustration; we will mention two of the most destructive diseases among the citrus trees; the gum disease and the scaley bark disease.

Your trees become deteriorated, which is notice-

able in the foliage, your foliage is thin, the leaves are small and a thousand appear upon trees where there should be five hundred; this is the first symptom of disease. Now the first thing to do after this is apparent, is to take a handful of the soil surrounding the body of your tree, some four or six inches down, put it between your hands and rub it thoroughly. If you can not detect any odor by giving it a quick smell after rubbing, then you might be safe in saying it is not soil condition.

Then we can look up our climatic conditions and see what they have been. Very often this last is the starting point of disease, the writer ventures to say that unless remedies are applied to prevent, citrus trees will become affected in larger numbers in the next few years than have ever been seen in Southern California, due to the climatic conditions of 1917.

You will remember that the early part of 1917 was cold, much fog and cloudy weather; immediately upon the change from this condition there followed an intense heat. Following this intense heat we dropped into one of the longest droughts, perhaps, that Southern California has seen for many years. During this extreme drought, I am safe in saying, there was more disease created among the human family than during any season of my knowledge in California for the past twelve years. There were more people complaining of feeling bad, stupid, with coughs and hay fever conditions. For about four months we lived entirely upon the electricity in the air without oxygen—the foliage lost its color and became a pale yellow.

Now, this condition worked a hardship upon the body and also the branches of the citrus trees, and especially with trees that were densely thick and without air chambers from the north and east so as to let the air come in contact with the body of the tree. Or in other words, the two o'clock sun produces an intense heat in a closed tree from the south and west, which would produce sunburn of the branches and check the flow of sap and finally reach its way down to the body of the tree and will eventually cause scaley bark in the near future on many trees.

This condition is what led the writer to the discovery of his wonderful tree tonic. It is absolutely necessary to make some applications upon the body of your trees at least once a year that will keep the bark in a nice soft velvety condition where it can expand with a natural demand for growth. This also keeps the bark, and sap cells open where the mechanical action of the tree may be strengthened so that the nutritious matter gathered from the soil can be properly distributed to all points of the tree.

The writer doesn't ask you to purchase his remedies, he just simply gives you the facts that are necessary to apply some solutions of some kind or changes, especially in Southern California where the distribution of rain fall is so wide apart.

The body needs moisture and needs a coating of something that will retain and hold moisture during this dry period. You probably can find some solution that would apply and at the same time be a benefit to some extent your tree, but you must understand and

realize to do this you must apply something that will penetrate and is composed of nutritious matter, which adds wonderfully to the development of your fruit, as well as keeping the body in a good condition.

It is safe for the writer to say that he has made the only discovery so far known in the United States, that is absolutely composed of mineral and nutritious elements especially benefitting to both tree and fruit. The writer realizes that for the protection and benefit of the citrus grower some necessary legislation is needed in the form of careful investigation and examination of every man who pretends ,or offers to suggest, or apply remedies to trees and accepting money from the grower without giving proper value in return. I see no other plan better than to have every man who pretends to treat trees and writes the public upon tree treatments to pass a rigid examination before a well qualified board of growers, showing his or her ability to properly understand the so-called diseases. Or to put it stronger, he or she must understand and be able to convince this board that his method or system is absolutely logical and practical. If this condition is met, there will be less diseased trees and fewer tree doctors.

The writer has experimented upon trees both healthy and diseased, with almost every possible drug and mineral substance known. He has tested out thoroughly the results to be obtained from the many experiments, and after all this, found very few drugs that can be applied to the tree satisfactorily. Many drugs will cause a stimulus for a time, but like whiskey,

when it disappears in a man's stomach, he is worse off than if he had not taken it.

What the grower wants is something that has a lasting effect and this can only be obtained by absolutely using the nutritious matter as mineral substance especially adapted and beneficial to the tree. There can be no substance used upon a tree satisfactorily that will not mix with water, many things will start and cause a reaction fo a short period, but when that effect has passed away, then your tree deteriorates faster than before you put it on.

After reading this book carefully, if you find you have a diseased tree , I am of the opinion that direct correspondence with me after you have answered my questions pertaining to the surroundings, soil conditions, and other conditions, I will be more able to give you better value. It may be understood here now that every purchaser of this book will be entitled to private correspondence with the writer by the enclosing of return postage, no further expense.

The writer desires to remind the reader once more before leaving this subject that the body represents the life and must be kept clean and the bark in a soft condition so as to expand. We will now talk a little while on the subject of cultivation.

CULTIVATION

The writer thinks there is more improper cultivation than there is profitable cultivation. Improper cultivation means to continuously cultivate the center

of your rows without paying any attention to the soil close up and around the trunk of your tree.

The writer makes the statement here that two thorough cultivations under and around the trunk of the tree is of more value than five cultivations in the middle of the row. The reason for this lies in the fact that proper cultivation under the spread of the tree continues to keep new life in the soil.

The soil needs to gather moisture and retain the same. Not only this, but when the soil is lively and in a sweet condition, new feeders will form near the trunk of the tree. If nothing under the tree can be found to feed upon, then the roots must gather their food from beyond the spread of the tree. This makes a long transportation to connect with the body of the tree, and where the base roots lose their feeders on account of no substance or moisture, this base root then becomes dry and many times cracks open or scales. This condition, when the sap from the nutritious matter comes from the middle of the row, reaches this affected part of the base root, causes much of the food value to be lost, and a certain percentage does not reach the base of the tree. For this reason it is very important to keep the soil in a condition so that these base roots will be properly taken care of, by keeping the tree from drooping entirely to the ground, and leaving an air space that the air may circulate under the tree and around the body. This, you will find, will be of great value to the tree.

There could be many things said about cultivation; I will mention a few of the improper things. First;

it is improper to cultivate a grove heavily in the month of August—this has a tendency to prevent the maturity of your first season's growth. Second, it would have a tendency to throw the organic matter out of the soil into the air. A dust mulsh would be proper; that is, to cultivate with a steel tooth harrow, followed by a light float—this especially applies to a light soil.

No man can make a set of rules that would apply to cultivation, for the fact that it would be misleading to many; others would prosper by it. Different classifications of soil require different methods of cultivation. Heavy soil cannot be handled in the same manner as light soil. This is a matter in which the grower must be his own judge. He should study the conditions of his soil, and know better how to cultivate it than any other man could tell him.

We will leave the subject of cultivation at this time and take up the matter of pruning.

PRUNING

Pruning is an important feature to fruit growing. Butchery is detrimental to fruit growing. This is a matter in which no rule can be laid down, and but little advice can be rendered, as each tree is a separate individual. No two trees require exactly the same method of pruning. Again, trees grown on heavy land require more severe pruning than those grown on light soils. About all I care to say at this time in regard to pruning is to explain the three fundamental principles which should be carried out in all pruning.

When the tree is about to come into bearing, principle number one is: to symmetrically shape and form your tree for its future. Take into consideration your climatic conditions, especially as to heat. Always leave your heavy branches on the south and west to protect your tree against the twelve to two o'clock sun. There can be no definite advice in this matter, for, as I stated above, each tree represents itself, and it is a question of good judgment. The man with the best judgment shapes his tree best for future conditions.

Principle number two: is to remove all surplus or unnatural wood, water sprouts, etc. This is another question of good judgment to determine what is fruit wood growth, and what vacancies and holes in your tree should be filled.

Principle number three: is to carefully prune your tree so that you may have small air chambers passing through from the north and east side of your tree. This I consider one of the most valuable points, especially where there is as much sunshine as is found in Southern California. These air chambers are great preventatives against moss, scaley bark, gum disease, and bark bound conditions. When plenty of air circulates around the tree with the southwest closed, where the strong heat penetrates, the air coming from the north and east keeps a much better temperature in your tree.

The writer will be only too glad to answer any and all questions regarding pruning, after he has obtained the full particulars and conditions surrounding

the groves upon which the advice is desired. It might be well to say here that the writer has supervised the pruning of more than one million trees, and as high as fifty thousand in one season.

The time for pruning is of the greatest importance. This is a question that the writer has long experimented upon, and has long been convinced that an amputation upon man, beast or tree will heal and perfect itself more quickly, with less shock to the tree in the months in which vegetation and everything is in its highest state of condition. No months should a man feel better, speaking in this altitude and latitude, than the months of May and June. Therefore, I consider from April to July first the proper period for pruning. Those who have followed my method can speak for themselves. So far as I know, it has proven best.

Now getting back to the most vital, the most important, and the one thing which cannot be neglected without bad results following—that is, to keep the body of your tree in such condition that the bark may expand by the natural demand of wood growth. The writer for many, many years gave the body of the tree his entire attention, which lead him to the wonderful discovery which the growers throughout the country are now being excited over. That is his wonderful tree tonic and root extract.

APPLICATION OF TREE TONIC

This tonic is applied upon the body of the tree, after making a basin around the trunk of the tree down

to the base roots commencing with the base and apply a good heavy coat from the base roots to where the branches leave the body of the tree—this being termed the distributing agency. Apply plenty of this in the forks and upon the limbs at least one foot to fourteen or sixteen inches. This is the only discovery offered to citrus growers that will meet the conditions of the citrus tree and absolutely cure all diseases of the tree.

The reason it cures all diseases is as follows; the first application commences the loosening of the bark. The second, two weeks later, continues the loosening of the bark and begins to enlarge the sap cells. The third application, thirty days later, completes the work of the second, and starts a reaction of sap. The fourth application, sixty days later, stimulates the heart action or mechanical action, gives forth a new sap of a healthy nature and sends it to the ends of the twigs and into the foliage. Then you will notice that your foliage spreads in width and grows thicker and darker.

A heavy foliage denotes health, but trees that have thousands and thousands of leaves that are small and pointed are in a deteriorating condition. One fourth that amount of leaves that are heavy in width, starchy and black can feed your fruit, as fruit depends largely for its development upon the nutritious matter fed through the foliage, especially so far as nitrogen is concerned.

The writer today has under his charge something more than twenty-five thousand citrus trees of all ages and conditions. This, perhaps, makes more of an experimental station than would be obtained otherwise,

as these trees are located in different communities, with different classifications of soils and different surroundings, which give the writer a far better chance to study all conditions.

ROOT EXTRACT

I will just mention a few facts concerning my Root Extract and what it is. It is a liquid which is made from minerals and nutritious matters, together with such matter as would have a tendency to purify and sweeten and reinstate soil conditions.

The writer will now send in a few sharp shooters, and if you are not a "mutt" you will grasp them.

SHARP SHOOTERS

Shot No. 1—Prune, don't butcher. Capacity is what is needed. Make your body grow in proportion to the spread of your top. Messick's Tree Tonic does this.

Shot No. 2—When you see your trees begin to deteriorate, don't stand on the outside and look at it. Go inside; examine your bark.

Shot No. 3—The cultivation under the tree means much. Do it or leave it. The removing of suckers is essential at the proper time, June to October. If you don't know what fruit wood is, ask some one.

Shot No. 4—If the south and west sides of your tree are exposed to the hot sun, that is to say, the body, place a protector there at once. This will probably save your tree.

Shot No. 5—If you don't want the inside of your

tree to burn, let light and air in from the north and east sides.

Shot No. 6—When your foliage gets thick and small, pointed and soft, this indicates lack of circulation. Messick's Tree Tonic applied to the body will save your tree.

Shot No. 7—Be careful about the first irrigation in the spring. Make your furrows farther apart, away from the tree than you would later in the season, for the reason that cold water, if too close to the tree, gives a set-back at this time. As the weather gets warmer make your ditches closer to the tree.

Shot No. 8—An ounce of preventive is worth a pound of cure. Keep your trees in a healthy condition with perfect flow of sap and no disease need enter your grove. Messick's Tree Tonic does this. Two applications a year produce more sugar, more juice, twenty per cent more weight and a thin rind. If you want this, say so.

Shot No. 9—The writer is going to enclose in this book some valuable formulas, not to be had elsewhere, and only to be used by the purchaser of this book. The purchaser must take his oath that he will use these formulas upon his own grove and no other, nor will he divulge any part of these formulas to any manufacturer of fertilizers, or any other person or persons than his immediate family. It has taken the writer many years to compound a fertilizer especially adapted to citrus trees. This the grower makes upon his own premises, buying his own raw material.

Shot No. 10—If you have a head full of scientific

theories, don't be a block head and let these theories prevent you from using your best judgment and common horse sense, the latter is what it takes to be a successful citrus grower.

Shot No. 11—Did you ever stop to think that life is represented in the same manner and form with a tree as with everything else that exists, lives and dies, and the body is the house that contains the machine? If you don't believe this, you make a mistake, and you are the loser. Keep your house well preserved and your machinery working fine.

Shot No. 12—The above are eleven commandments. If you respect them, you will honor the writer.

FERTILIZATION

A word in regard to fertilization;—the writer is the first man in the United States to produce a tree fertilizer. This fertilizer was especially compounded for the production of apples. Later he compounded a similar fertilizer for citrus trees, but has never placed it on the market.

It is a fact that citrus trees require a much stronger fertilizer than is required for apples, as the citrus trees have three distinct periods of growth and continued foliage. The difference between the apple tree and the citrus tree is as follows: the citrus has three descensions and three ascensions every twelve months, therefore the citrus practically feeds all of the twelve months, while the apple only feeds six months, lying dormant the other six months.

I am sorry to say that with all of the scientific

experiments that have been made in later years, they have not discovered the real genuine fertilizer that fills the requirements, needs and demands of a citrus tree and its fruits. Humus is the prime factor. Following humus, minerals are largely needed, some phosphate and some nitrogen is also necessary.

The writer stands ready to say that the formula which he will enclose with this book, will be of more value to the citrus growers of California than any thing they have ever had handed down to them; for if they buy their own raw materials in the crude state, manufacture it on their own premises, they certainly lessen the cost of fertilization. The compounding of this formula can be done by any common, ordinary, sensible man, woman, or child; as the larger part of it means only work.

Any man who uses this formula three years and does not say he has received more value than from any other method he has ever tested, he may quickly return the formula to the writer, and the refund of his money will follow by return mail. The writer knows whereof he speaks, and this book is only composed of absolutely demonstrated facts. The writer does not consider it wise to use a whole lot of surplus and unnecessary language in this book. We must deal with the matter in a careful manner and with as few words as possible.

Fertilizers contain only one element; for instance, blood contains one element, bone another, tankage another, nitrate of soda another,—the writer compounded the whole in one, together with the humus

producing the sweetening of the soil and the minerals that are absolutely necessary for the development of the fruit. Too much blood will create damage to the tree; so with nitrate of soda or any of the hydrates if used in too large quantities and all by itself.

It has been my experience that the soil much prefers the combination of all the necessary elements in one and it can more quickly relish and digest same. It is seldom you hear this when questions are raised, "How is your soil for minerals?" Have you ever had any one ask you if salt was necessary in your soil? Did you ever ask any one? Salt is a mineral and produces moisture wherever it is and retains moisture. Is it necessary or not?

I would like to call your attention to the mountain district. Have you ever noticed that the best flavor, the best developed fruit that is produced is in the groves that lie nearest the mountains? This does not apply to citrus groves alone, but to all classes of fruit, and proves conclusively that the mineral substances which the disintegration of the mountain supplies, are an important factor in the production of the finer flavored fruits. The fruit farther away from the mountains contains less of this element.

The writer desires the reader to understand that he is not writing this book simply for money. On the other hand, he is absolutely sure that this is the only way in which he can possibly give the grower the value of his life work and not confuse the grower upon any other subject than the one in which he is interested. This is like the boy's speller at school, or his reader—

you must read and re-read until you thoroughly commit it in order to get the value from this book. Allow no one to cause you to deviate from the methods handed down to you in these pages until you have absolutely made a two years test.

The question of how to fertilize is of the greatest importance. One time in the writer's life he was called to the platform in a state horticultural assembly where one of the greatest fruit growers in the United States had just retired from the platform, who had been assigned the subject "The Best Methods of Fertilization." This great authority stated that he used commercial fertilizer in his grove and that he used a drill and drilled the fertilizer, going up and then down in the center of each row.

When the writer was called to the platform he spoke on the same subject. He took exception to this great man's methods and by illustration showed the growers, to their entire satisfaction, that this man was absolutely wrong.

This illustration was used: "The former speaker's method puts me in mind of placing my horse in one corner of the barn and tying him there, and placing his feed box in the opposite corner and put his feed in it regularly at feeding time until his box would get full and run over. But it would take that horse a long time before he could stretch that rope long enough to reach that food. Now, Mr. Grower, you know as well as I do that the roots must extend out to this point and your fertilizer must become part of the soil before your feeders can accept it. When this

condition is ready for the feeders, then it is a long transportation from there to the receiving agency of your tree.

"Now, isn't this rather unwise, unskillful, and not the best method to be obtained, from the fact that nature has declared so emphatically that the tree top must spread in proportion to the spread of the roots, and when they have reached the outer circle of the tree, nature says they must go downward and not straight outward. The sun would have a tendency to affect them. On the other hand, they must go down and search the soil for moisture and for mineral substances, and the roots closer to the surface must gather the humus, nitrogen and phosphate near the surface.

"If your grove is saturated with fine rootlets throughout the center of the rows, I want to say frankly to you these roots are not feeders for your tree, but are soil robbers. You should tear these up by plowing deep in the center of your rows at least every two years, one year one way, and the next year the other, not going closer than eight feet from your tree, then plow shallow up to the circle of your tree.

SYMPTOMS OF TREE DISEASES

Symptom No. 1. To notice deterioration, the first symptom will show in a large amount of foliage becoming very small, sharp-pointed and soft. This symptom indicates that the lungs of the tree are closed; that the tree is receiving no nitrogen from the air; immediate steps should be taken to cause a reaction of the sap.

Symptom No. 2. Examine your soil close up to the body of the tree. Take a handful of soil six inches deep close to the body of the tree and place in a glass of water. Let stand thirty-six hours, then pour the water off and smell the soil. If it smells sour, musty and moldy this would indicate sour sap has been raised.

Symptom No. 3. To determine gum disease, put your hand on the body of the tree; feel if the bark has become tightened; notice closely if any checks or pockets in the bark are noticeable. Let your hand remain on the body of the tree until the heat has gone out of your hand; if the body sends a cold sensation, this would indicate that your tree is not in bad condition. If there is no coolness, but the bark feels luke warm and lifeless, this would indicate that the outer, or bark, cell saps are not working. This same symptom applies to scaley bark. Another symptom that follows this is the light color that the foliage takes on, with frequent yellow leaves showing up.

Symptoms of health: First; a real cold sensation to the hand from the body. Second; a smooth skin or bark on both body and branches. Third; wide or broad, black, stiff, starchy foliage. Fourth; when leaf will bend and when put together will crack like a ripe watermelon, this denotes health and indicates that the foliage is drawing its share of nitrogen from the air; also denotes that the heart or inner sap is in good condition and able to throw off all impurities and stand a strong attack from the enemy.

Notify the physician as to any of the above conditions and free communication will at once begin.

Practical Study of Nature

The writer wishes to speak a few words as to the study of nature, as we all know that the book of nature is a large one and no one man can ever be able to fully understand. But there are certain points along this beautiful study in which men may become more skilled than others. This can only be done by the singling out of one subject. The study of the orange and lemon would be quite different to that of deciduous fruits, small fruits or walnuts. Therefore, the writer for the last few years has confined himself strictly to the study of citrus trees.

I presume every reader will realize this one fact, that a man who studied nature and made demonstrations would be called a practical man, or a crank by the college experts. Therefore, it makes a hard fight for a practical man to get recognition without a college diploma. The writer does not wish to speak harshly of the scientific heroes, but will ask a few questions of the grower and let him answer them himself.

First: What have the scientific bureaus done for the fruit growers? Now be fair in this matter in compiling your answer.

Second: Have the scientific bureaus eradicated any diseases that attack your trees?

Third: Have the scientific bureaus eradicated or

exterminated a single pest or insect that preys upon your fruit or trees?

Fourth: If you know of any discovery of any particular value that has been rendered to you by the scientific bureaus or university, won't you be kind enough to send the Doctor a letter stating what value has been obtained from the scientific bureaus, as the Doctor wishes to put himself right in the matter. He already knows of some good things they have done, and he does not wish to be unfair.

What we need is more careful diagnosis of each particular grove and a record book in which the grower may keep a careful record of all conditions and also all results of all treatments. This will quickly determine what the proper treatment of trees means.

But keep this in mind, Mr. Grower, the body of the tree is the life; in fact it represents the entire tree. Keep this body in good condition. So far nothing has been discovered better than Doctor Messick's Tree Tonic.

Dr. Messick's Work Commended

We will add to this a few compliments upon the Doctor's work through life, together with a piece of poetry written by Mr. Atwood, editor of the "Practical Fruit Growers," Springfield Mo., as follows:

Introduction of H. L. Messick by G. A. Atwood, Editor of the "Practical Fruit Growers," at Springfield, Mo., before the Green County Horticultural Society meeting:

> "The founder of organizations, which for the producer have stood; the friend of the tree in affliction; he knows all its sap cells and wood. The man of the million tree record; those trees now wave in the sky and bearing their fruit in abundance, they prove to the passer-by, that he in vain has not labored in studying out their need. When soil is impoverished and lacking, he knows how their hunger to feed."

THE MILLION TREE MAN

Is he a national hero and why.

Oh, who is the National hero,
Not he who lives to destroy,
Not they with their guns or warships
Devastating the earth of its joy.

But he who gives aid to dame Nature
And helps her to blossom and bear,
Rich fruits for her unborn children
And makes patient earth more fair.

The tall waving trees and blossoms
More graciously wave in the sky,
To praise their friend and co-worker
To all of the passers-by.

All hail to the Burbanks and Messicks,
Producers of beauty and work;
Are friends and the benefactors
Of all of the children of earth.

Oh, turn ye the guns into plow shares,
And pruning hooks too; and you can,
And make of destroyers, producers,
All hail to the million tree man.

Through long years of toiling and pruning,
With eyes lifted up toward the sun;
His sight at last was the price he paid
E'er he nature's secrets had won.

This man with the million tree record,
This wizard and friend of the trees
Will kindly now address you,
So listen attentively, please.

He launched many organizations,
That long have flourished and grown;
He labored to prosper the many
Without thought of gain for his own.

C. H. Williamson, of Quincy, Illinois, the man of the thousand acres, said:

"Doctor Messick is a wizard." Later Mr. Williamson, at the Mississippi Apple Growers Association, of which Mr. Messick is the founder, said:

"I have known Mr. Messick for a long time and know of his numerous and wonderful demonstrations. I consider Mr. Messick is an exception among men, so far as knowledge of trees is concerned."

FIRST NATIONAL BANK

OF LORDSBURG, CAL.

E. R. YUNDT, President H. J. VANIMAN, Vice-Pres.

L. A. BLICKENSTAFF, Cashier

Monday, March 4th, 1918.

Mr. H. L. Messick,
Pomona, Cal.
Dear Sir:

I wish to congratulate and express to you my thanks for having been induced to try your celebrated Tree Tonic and Root Extract. I think it has been quite beneficial to trees affected with gum disease, and tends to build up the tree in general, (well or sick). I must say you are a wizard in your line.

Personally am very sorry that you do not have eye sight that you might see the beautiful rich green color of the orange tree, and especially beautiful when treated with your preparations.

Yours very truly,
(Signed) H. J. VANIMAN,
Vice-President.

Office of CHARLES C. CHAPMAN

Fullerton, California.
February 19th, 1918.

Dr. Webber,
Riverside, California

My Dear Doctor Webber:—

I take pleasure in introducing my friend, Mr. H. L. Messick of Pomona.

Mr. Messick has given life-long study to the care of apple and orange trees, and I feel sure he has some information that would be valuable to the growers in general. Anyway, he would be glad to meet you and have a little talk with you about the interests of the citrus industry here in Southern California.

Sincerely yours,
CHARLES C. CHAPMAN.

RECORD OF CROPS

In conclusion of this book, the writer has decided to place a blank map of a ten acre grove, numbering each tree, so that the grower may place in his memorandum on the blank sheet the condition of each tree. This will prove to be of great value in keeping constantly in touch with the deteriorated tree in the grove. Wherever a tree shows signs of deterioration, immediate steps should be taken for its relief. By having a record of each tree, it would be easy to locate every diseased tree in said grove.

Another blank sheet will be placed for the purpose of keeping the record of the number of boxes, the number of pounds, and the number of pounds of culls, the quality test and the price obtained gross; also the net price after deducting all costs of production.

To keep this record accurately for a period of five years will determine the profits and losses and will put you in a condition to exactly understand your grove. There will also be a place on this record where damage by frost or freezing may be kept. This will determine the cost of protection or the loss without protection, either by smudge or other means.

In conclusion, the writer will appreciate very much a letter from every reader of this book after he has carefully read and carefully weighed every subject, as to the fact whether he considers he has been

benefitted by this book or not. The writer has taken great pains to set up nothing in this book that is not a demonstrated fact; therefore the great enjoyment and pleasure that the writer would receive from the knowledge that his book has been appreciated, would be of untold value to him in his blind condition.

Therefore, the writer wishes the reader much profit and blessing from the lines herein. The results, I will leave to you. Careful obedience of the rules in this book will bring them forth.

FORMULAS

The writer has decided to give with each book, three formulas, as follows: No. 44 is a dry humus and mineral fertilizer; No. 55 is a root extract; No. 66 is a pruning paint.

As these formulas have no equal so far discovered, and go in harmony with Messick's celebrated Tree Tonic, they are very valuable indeed. This Tonic has been used on more than 25,000 citrus trees. On account of the blind condition of the author, and his poor health, he is unable to manufacture the three formulas mentioned above.

This is the greatest value ever handed down to citrus growers; these formulas and the book of information, all for $1.00. These formulas will not be printed in the book, but will be delivered upon receipt of the signed application on the last page of this book.

The purchaser of the book will kindly read his book, fill out the blank and address same to Dr. H. L. Messick, Pomona, Calif.

CONCLUSION

As these are the concluding pages of the book, the writer desires to say to the grower that so far, he has never solicited any business, as he is firmly of the belief that a good physician does not have to go on the street and ask people to send for him. The physician who can demonstrate a fact soon builds up a practice without much advertising. The man who has to force people to buy his product, in my observation through life, the buyer many times buys against his own will and better judgment, and is never ready to give even best reports for the fact that he had no faith to start with.

I desire to say right here, that if you have no faith in my treatment, after investigation of demonstrations, or if your better judgment does not tell you, after reading this book, that it is purely common sense and thoroughly practical, then I prefer that you do not let loose of your money for my medicine until you have satisfied your own mind that you will be repaid many times by the use of my treatments.

The sole object of my treatment is to put the body of the tree in condition to produce healthy circulation; healthy blood with free distribution covers the entire question of success in fruit growing. In other words, to keep the constitution of the tree in such a healthy state that it can resist the most severe attack by any enemy. As I have said before, use your own

best common sense, together with your best judgment, allow no man to overpower them by argument, and you will not be buncoed as much in the future as you have been in the past.

It is my desire now to advance the first step toward bringing the grower closer in touch with the medical aid he can lend his trees, and I desire every reader of this book to at once write me if the following organization appeals to him. I will herein lay plans for your future benefits, although I may not, as I am growing in years, be able to see the great results to be obtained from the following organization.

Organization as follows:

Be it resolved that I, a citrus grower, do heartily endorse an organization, to be known as a medical board for trees. I further believe that any man desiring to advise the grower upon practical methods or system of treatment should be able to pass a rigid examination before this medical board, showing himself qualified in every detail to administer valuable information gained by practical demonstration. He must also know the correct anatomy and diagnosis of a tree. This board will select one man in the various localities to cooperate with the growers and advise them as to medical treatment. There will be one general advisor, whom all local advisors will report to quarterly. There will be a meeting held quarterly by this board where examinations will be made. There will also be an annual meeting held where all the members of this medical organization will

meet and rehearse results obtained during the year. Every member of this board will be entitled to a vote for the officers for the ensuing year. This board will seek at the hands of our Legislative bodies such legislation as will be beneficial to the medical treatment of trees.

If you are in favor of the above organization, (which is merely an outline) please write to Dr. Messick at once signifying your willingness to take membership in such an organization.

Address all communications to Dr. H. L. Messick, 151 So. Thomas St., Pomona, Calif.

RECORD OF CROPS FOR YEAR 1919

On grove located and described as follows: .....

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Number of trees in grove .....

Number of acres in grove .....

Gross Production.

Picked ..... boxes.

Weight .....pounds.

Grade, Extra Choice, ...pounds.

Grade, Choice .....pounds.

Grade, Culls, ...pounds.

Price, ...per pound.

Total ..... $.....

Cost of Production.

Fertilizer used ..... $.....

Tree medicine used on body of trees, $.....

Pruning ..... $.....

Cultivation ..... $.....

Water ..... $.....

Labor ..... $.....

Picking, hauling, packing & shipping, $.....

Total ..... $.....

Net Proceeds derived from grove No..... Total $.....

RECORD OF CROPS FOR YEAR 1920

On grove located and described as follows: .....

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Number of trees in grove .....

Number of acres in grove .....

Gross Production.

Picked ..... boxes.

Weight .....pounds.

Grade, Extra Choice, ...pounds.

Grade, Choice .....pounds.

Grade, Culls, ...pounds.

Price, ...per pound.

Total .....$.....

Cost of Production.

Fertilizer used ..... $.....

Tree medicine used on body of trees, $.....

Pruning ..... $.....

Cultivation ..... $.....

Water ..... $.....

Labor ..... $.....

Picking, hauling, packing & shipping, $.....

Total .....$.....

Net Proceeds derived from grove No..... Total $.....

RECORD OF CROPS FOR YEAR 1921

On grove located and described as follows: .....

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Number of trees in grove .....

Number of acres in grove .....

Gross Production.

Picked ..... boxes.

Weight .....pounds.

Grade, Extra Choice, ...pounds.

Grade, Choice .....pounds.

Grade, Culls, ...pounds.

Price, ...per pound.

Total .....$.....

Cost of Production.

Fertilizer used ..... $.....

Tree medicine used on body of trees, $.....

Pruning ..... $.....

Cultivation ..... $.....

Water ..... $.....

Labor ..... $.....

Picking, hauling, packing & shipping, $.....

Total .....$.....

Net Proceeds derived from grove No..... Total $.....

RECORD OF CROPS FOR YEAR 1922

On grove located and described as follows: .....

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Number of trees in grove .....

Number of acres in grove .....

Gross Production.

Picked ..... boxes.

Weight .....pounds.

Grade, Extra Choice, ...pounds.

Grade, Choice .....pounds.

Grade, Culls, ...pounds.

Price, ...per pound.

Total .....$.....

Cost of Production.

Fertilizer used ..... $.....

Tree medicine used on body of trees, $.....

Pruning ..... $.....

Cultivation ..... $.....

Water ..... $.....

Labor ..... $.....

Picking, hauling, packing & shipping, $.....

Total .....$.....

Net Proceeds derived from grove No..... Total $.....

RECORD OF CROPS FOR YEAR 1923

On grove located and described as follows: .....

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Number of trees in grove .....

Number of acres in grove .....

Gross Production.

Picked ..... boxes.

Weight .....pounds.

Grade, Extra Choice, ...pounds.

Grade, Choice .....pounds.

Grade, Culls, ...pounds.

Price, ...per pound.

Total .....$.....

Cost of Production.

Fertilizer used ..... $.....

Tree medicine used on body of trees, $.....

Pruning ..... $.....

Cultivation ..... $.....

Water ..... $.....

Labor ..... $.....

Picking, hauling, packing & shipping, $.....

Total .....$.....

Net Proceeds derived from grove No..... Total $.....

REPORT ON THE CONDITION OF GROVE FOR YEAR 1919

Careful inspection of all trees made January 1st.

Another inspection on June 1st.

Third inspection on September 1st.

I find June 1st trees No. .....

in condition as described .....

.....

September inspection, I find trees No.....

.....

Improved .....

Condition not improved .....

Applied Messick's Tree Tonic, (Date) .....

Second Application, (Date) .....

Third Application, (Date) .....

Fourth Application, (Date) .....

Applied Formula No. 44 (Date) .....

Noticeable results 90 days later .....

Notified Dr. H. L. Messick, Pomona, as to conditions.....

Remarks at end of year.....

.....

.....

If you will carefully keep this record and watch the symptoms of the trees as carefully as you watch the symptoms of your children, and upon the first symptoms of disease seek advice, you will receive great benefit. You will find on a separate page symptoms of disease and deterioration.

REPORT ON THE CONDITION OF GROVE FOR YEAR 1920

Careful inspection of all trees made January 1st.

Another inspection on June 1st.

Third inspection on September 1st.

I find June 1st trees No. .....

in condition as described .....

.....

September inspection, I find trees No.....

.....

Improved .....

Condition not improved .....

Applied Messick's Tree Tonic, (Date) .....

Second Application, (Date) .....

Third Application, (Date) .....

Fourth Application, (Date) .....

Applied Formula No. 44 (Date) .....

Noticeable results 90 days later .....

Notified Dr. H. L. Messick, Pomona, as to conditions.....

Remarks at end of year.....

.....

.....

If you will carefully keep this record and watch the symptoms of the trees as carefully as you watch the symptoms of your children, and upon the first symptoms of disease seek advice, you will receive great benefit. You will find on a separate page symptoms of disease and deterioration.

REPORT ON THE CONDITION OF GROVE FOR YEAR 1921

Careful inspection of all trees made January 1st.
Another inspection on June 1st.
Third inspection on September 1st.

I find June 1st trees No. .....

in condition as described .....

.....

September inspection, I find trees No.....

.....

Improved .....

Condition not improved .....

Applied Messick's Tree Tonic, (Date) .....

Second Application, (Date) .....

Third Application, (Date) .....

Fourth Application, (Date) .....

Applied Formula No. 44 (Date) .....

Noticeable results 90 days later .....

Notified Dr. H. L. Messick, Pomona, as to conditions.....

Remarks at end of year.....

.....

.....

If you will carefully keep this record and watch the symptoms of the trees as carefully as you watch the symptoms of your children, and upon the first symptoms of disease seek advice, you will receive great benefit. You will find on a separate page symptoms of disease and deterioration.

REPORT ON THE CONDITION OF GROVE FOR YEAR 1922

Careful inspection of all trees made January 1st.
Another inspection on June 1st.
Third inspection on September 1st.

I find June 1st trees No. .....

in condition as described .....

.....

September inspection, I find trees No.....

.....

Improved .....

Condition not improved .....

Applied Messick's Tree Tonic, (Date) .....

Second Application, (Date) .....

Third Application, (Date) .....

Fourth Application, (Date) .....

Applied Formula No. 44 (Date) .....

Noticeable results 90 days later .....

Notified Dr. H. L. Messick, Pomona, as to conditions.....

Remarks at end of year.....

.....

.....

If you will carefully keep this record and watch the symptoms of the trees as carefully as you watch the symptoms of your children, and upon the first symptoms of disease seek advice, you will receive great benefit. You will find on a separate page symptoms of disease and deterioration.

REPORT ON THE CONDITION OF GROVE FOR YEAR 1923

Careful inspection of all trees made January 1st.
Another inspection on June 1st.
Third inspection on September 1st.

I find June 1st trees No. .....

in condition as described .....

.....

September inspection, I find trees No.....

.....

Improved .....

Condition not improved .....

Applied Messick's Tree Tonic, (Date) .....

Second Application, (Date) .....

Third Application, (Date) .....

Fourth Application, (Date) .....

Applied Formula No. 44 (Date) .....

Noticeable results 90 days later .....

Notified Dr. H. L. Messick, Pomona, as to conditions.....

Remarks at end of year.....

.....

.....

If you will carefully keep this record and watch the symptoms of the trees as carefully as you watch the symptoms of your children, and upon the first symptoms of disease seek advice, you will receive great benefit. You will find on a separate page symptoms of disease and deterioration.

ORDER BLANK

Messick's Tree Tonic, Formula No. 77.

Dr. H. L. Messick,
Pomona, Calif.

Please ship me via..... (freight or express) ..... gallons with which I desire to test my grove of ..... trees. (Mention variety of trees.)

You will find enclosed with this order .... Dollars. I hereby agree to follow carefully the copyrighted directions.

Price per gallon—less than bbl. lots, $2.00 per gal.

Price per gallon in bbl. lots, $1.50 per gallon.

Name of station .....

Name of P. O. .....

County ..... State of .....

(Signature) .....

Nothing less than 5 gallon lots.

APPLICATION FOR FORMULAS

I .....

Post Office ..... County of

..... State of .....

do say that I have read your book entitled "Citrus Trees and their Diseases," and ask that you forward me formulas as described in book, and agree to use these formulas upon my grove only. I further agree that I will not divulge, manufacture, or offer for sale any of the products made from these formulas, under the penalty of the copyright act.

After reading your book, I feel as though the contents possess much value. (Please give below any comment you wish to make.)

Remarks: .....

.....

.....

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.....

.....

77 DOES CURE Gum and Scaley Bark, and makes healthy trees, better fruit, more weight, earlier maturity. Can you afford to do without it?

Pronounced dead by 12 men, September 4, 1916.
Treated with 77 six times.

and Orange County groves, together [illegible] acres that [illegible] and [illegible] with the treatment of 40 acres of al- again in 1920.

Nine months after first application, notice new growth. By placing canvas over this tree, we continued growth all winter.

Twenty- three months later than first photo, after producing fine crop of cherries. Dr. Messick offers $100 to any man in California that can accomplish same result. This tree was solid scab of gum from ground to tip of twigs; was also girdled by gopher within two inches of the entire circle. If it cured this tree, 77 will cure yours. Write for book.

and Orange County Envoy, wrote: "... was also under many men ... with the treatment of 40 acres of al- again in 1920.

The above photos represent orange groves after being treated with 77, four applications. Note foliage and condition. The above were badly gummed and scaley barked. If it made healthy foliage on these trees, why will it not on yours? If interested write for information. The time has arrived when the grower of citrus fruit must understand that skilled medical attention must be necessary. Free consultation at Dr. Messick's office, 151 South Thomas Street Pomona, California.

P. S. Don't forget book entitled "Facts on Citrus Trees and Their Diseases." Free with this book, three valuable formulas. Send $1.00.

Patrons of 77

1916, Williams Brothers, LaVerne, who now claim to manufacture, but not the genuine.

R. L. Lee, Ontario, who says it has no equal. Mr. Lee bought in '17-'18-'19.

John Beck, 256 South Main Street, Pomona, has used eight barrels, and placed in his order for 1920.

Albert Beck used two barrels in 1917, four barrels in 1918 and has bought six barrels in the last 30 days, and shipped same to his Arlington Heights grove, where he has 58 acres of oranges and lemons. Mr. Beck says he is so well pleased with his former treatment that he will apply 77 upon his entire grove in 1920.

Miss Hattie Stratton, LaVerne, used five barrels in 1917, 6 barrels "L(L" in 1918, also again in 1919. Says she is well pleased.

Mrs. Robinson, Pomona, used two barrels in 1917, two in 1918 and two in 1919.

W. J. Rinke, Hollywood, has used ten barrels since 1916 on his Riverside and Orange county groves, together with the treatment of 40 acres of almonds in San Luis Obispo county, whose letter will be read at the sale, giving his experience with "77".

Mr. Beasley, San Dimas, has applied "77" to his entire grove of ten acres in 1917-'18-'19, and has now placed his order for 1920 treatment.

Mr. Dunn, East Holt Avenue, Pomona, has treated his entire grove of five acres in 1917-'18-'19.

F. A. Johnson, San Bernardino Avenue, Pomona, test on eight acres in 1919. Results remarkable.

Mr. Sweet, Cucamonga and Orange Grove Avenues, Pomona, first test on two barrels in 1919. Has now placed orders for two barrels for 1920.

Dr. Messick has given Mr. Sweet the right to manufacture and sell his celebrated liquid root extract, of which there has been sold and used upon citrus trees in Pomona Valley more than fifty thousand gallons.

Rev. C. R. Hudson, Pomona, made test on 90 trees in 1917. So well pleased he has treated his entire grove of ten acres three times since, and will treat again in 1920.

To the Purchaser of this Book

Will you not carefully read this book, and if satisfied of its value, kindly do a favor to a blind man by not loaning it. However you will greatly oblige him by telling your friends that it's well worth the money. Ask them to send one dollar to Dr. H. L. Messick, 151 S. Thomas Street, Pomona, Cal. and receive a copy postpaid.

14 DAY USE
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LOAN DEPT.

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Renewed books are subject to immediate recall.

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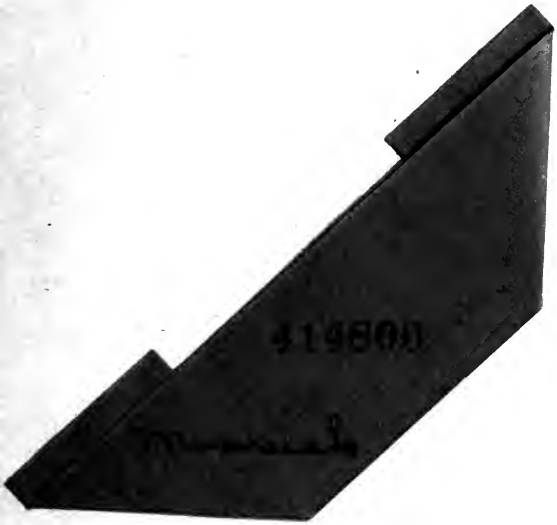
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